

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-014242**Date Inspected:** 16-Apr-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Mr.Tian Lei**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girder(OBG)**Summary of Items Observed:**

This CALTRANS OSM Quality Assurance Inspector (QA) Surendra Prabhu was present during the times noted above for observations relative to the fabrication of the Self Anchored Suspension (SAS) Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

This QA Inspector Randomly observed the following work in progress:

BAY-1- Traveler Rail (TR)

Flux Cored Arc Welding (FCAW) welding of weld joint 20TR1-038-003. Welder is identified as 216872. ZPMC Quality Control (QC) is identified as Mr. Xiang feng feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2231-TC-U5-F.

FCAW welding of weld joint 20TR2-052-011. Welder is identified as 059450. ZPMC Quality Control (QC) is identified as Mr. Xiang feng feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2231-TC-U5-F.

BAY-2-Floor Beam (FB)

Submerged Arc Welding (SAW) welding of weld joint FB3191-001-003. Welder is identified as 207237. ZPMC Quality Control (QC) is identified as Mr. Zhulin. The welding variables recorded by QC appeared to comply with

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the Applicable WPS: WPS-B-T-2221-B-U3c-S-2.

SAW welding of weld joint FB3188-001-011. Welder is identified as 045265. ZPMC Quality Control (QC) is identified as Mr. Zhulin. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2221-B-U3c-S-2.

BAY-2-TR

FCAW welding of Repair weld joint 20TR1-008-001. Welder is identified as 045276. ZPMC Quality Control (QC) is identified as Mr. Yang Qing feng. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-345-FCAW-1G (1F)-Repair-1. The Repair welding was been performed against the Welding Repair Report (WRR) No: B-WR11951 Rev No: 0 and ZPMC Ultrasonic Testing (UT) Report No: B787-UT-12188.

BAY-5-TR

FCAW welding of Repair weld joint 11TR3-026-014. Welder is identified as 204342. ZPMC Quality Control (QC) is identified as Mr. Sheng jian gao. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-345-FCAW-2G (2F)-Repair-1. The Repair welding was been performed against the Welding Repair Report (WRR) No: B-WR11742 Rev No: 0 and ZPMC UT Report No: B787-UT-12186.

BAY-7-TR

FCAW welding of Repair weld joint 10TR2-006-014. Welder is identified as 048625. ZPMC Quality Control (QC) is identified as Mr. Cui jian jie. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-345-FCAW-2G (2F)-Repair-1. The Repair welding was been performed against the Welding Repair Report (WRR) No: B-WR11922 Rev No: 0.

BAY-8-TR

This QA Inspector observed ZPMC welding personnel performing Buttering by FCAW process for 10TR1-001. Welder is identified as 054460. In process FCAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e. WPS-345-FCAW-1G (1F)-Repair-1. The Buttering welding was been performed against the B-CWR1340 Rev No: 0 and ZPMC Quality Control (QC) is identified as Mr. Zhao chong jian and Certified Welding Inspector (CWI) is identified as Mr. Sun Bo.

This QA Inspector observed ZPMC welding personnel performing Buttering by FCAW process for 11TR3-002. Welder is identified as 219414. In process FCAW appears to be progressing in compliance with Caltrans Engineer Approved welding procedure i.e. WPS-345-FCAW-1G (1F)-Repair-1. The Buttering welding was been performed against the B-CWR1340 Rev No: 0 and ZPMC Quality Control (QC) is identified as Mr. Zhao chong jian and Certified Welding Inspector (CWI) is identified as Mr. Sun Bo.

BAY-8-Bike Path (BK).

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FCAW welding of weld joint BK004A6-055-068. Welder is identified as 210341. ZPMC Quality Control (QC) is identified as Mr. Zhang Qiao. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-2132.

BAY-6-WEST JACKING FRAME (WJF)

SMAW welding of weld joint WJF-0-263. Welder is identified as 048800. ZPMC Quality Control (QC) is identified as Mr. Zhao Jian Hang. The welding variables recorded by QC appeared to comply with the Applicable WPS: WPS-B-T-3212-TC-U4c.

During Quality Assurance Random in process Visual Inspection (VT) review of welds located on Orthotropic Box Girder (OBG) West Jacking Frame WJF-0- 071, this Quality Assurance Inspector (QA) discovered the following issue:

- One (1) Longitudinal Linear Crack observed on the tack weld measuring approximately 75 mm in length.
- The weld is identified as: WJF-0-071.
- According to ZPMC QC they will remove the tack weld and perform Magnetic Particle Testing (MT) prior to welding.
- The attached photographs provide additional detail.

This QA notified ZPMC QC identified as Mr. Zhao Jian Hang and AB/F QA Inspector identified as Mr. Luo Lai Quan of the above issue, and reported to the Team leader.

Applicable reference:

AWS D1.5 2002 figure 6.8 – specifies for fillet weld sizes between 6mm and 13mm the maximum discontinuity length is approximately 2mm to 4mm.

AWS D1.5 (02) Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks”.

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

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Summary of Conversations:

Only general conversation was held between QA and Quality Control (QC) concerning this project.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang 15000422372, who represents the Office of Structural Materials for your project.

Inspected By: Prabhu,Surendra

Quality Assurance Inspector

Reviewed By: Hall,Steven

QA Reviewer